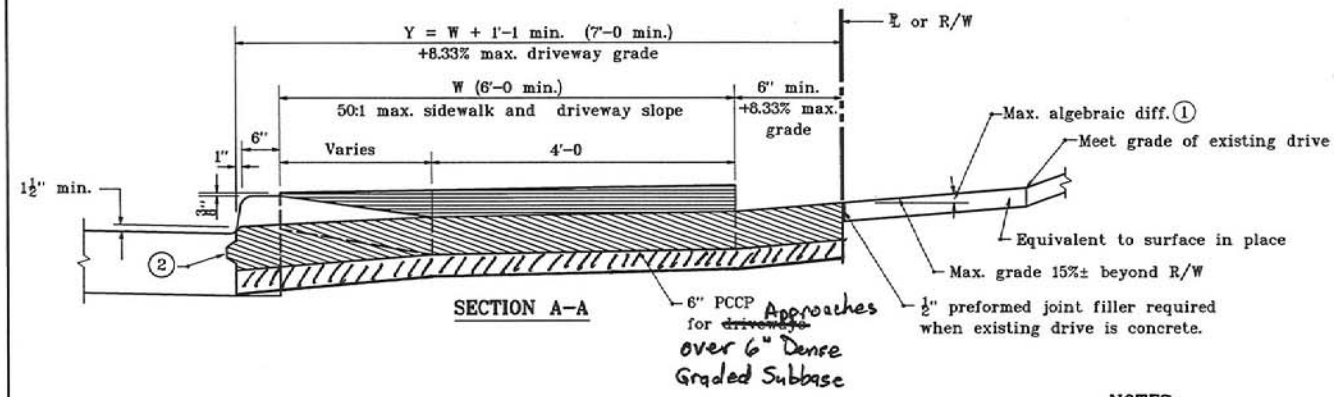
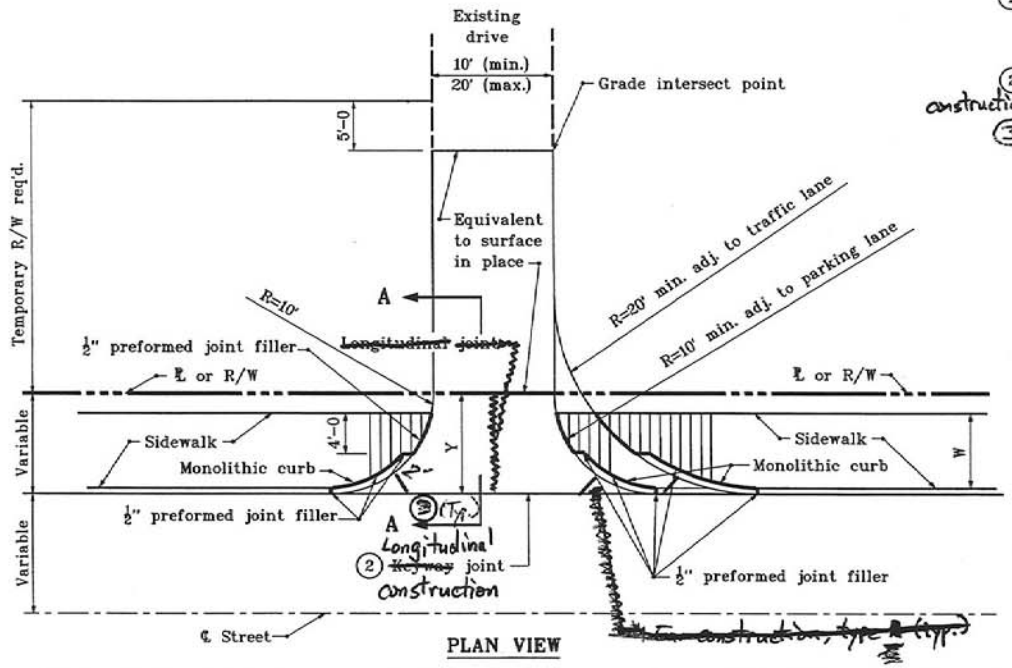




NOTES:

(1) The maximum algebraic difference in grades shall not exceed 8% for crest vertical curves, nor 12% for sag vertical curves.

(2) See Standard Drawing E 610-DRIV-16 for ~~keyway~~ longitudinal construction joint details.

(3) Ear construction type B ~~(Typical)~~ as shown on Standard Drawing E 605-ERCN-02

LEGEND

W = Width of sidewalk

Y = Distance from front face of curb to ℄ or R/W

Curb ramp

Curb ramp view

Concrete pavement

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS I DRIVE

SIDEWALK ADJACENT TO CURB

JANUARY 2000

STANDARD DRAWING NO. **E 610-DRIV-01**

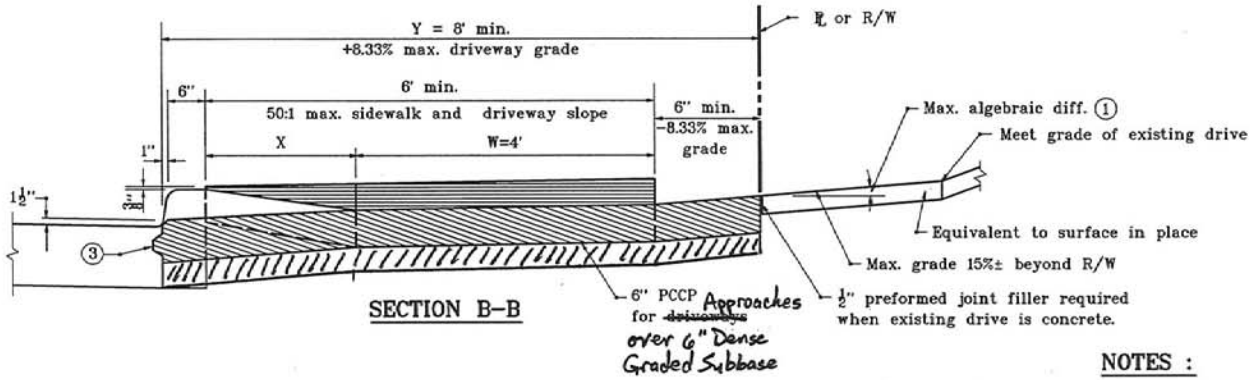
ANTHONY L. URESKOVICH REGISTERED No. 18935 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

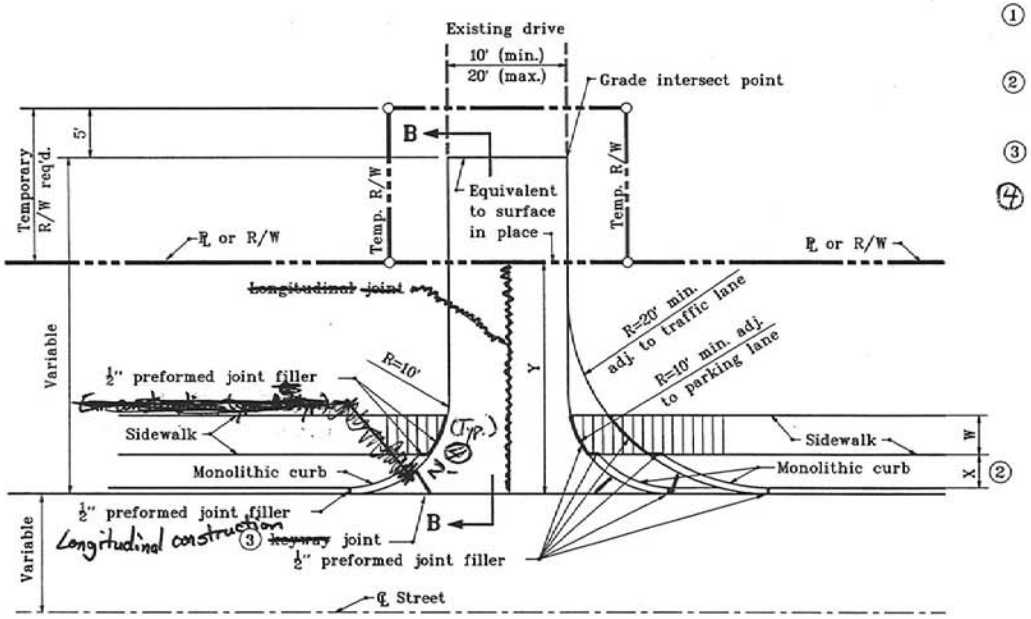
/s/ Anthony L. Ureskovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

DRAFT

/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



SECTION B–B



PLAN VIEW

X = 2' TO LESS THAN 6' FROM FACE OF CURB

NOTES :

1. The maximum algebraic difference in grades shall not exceed 8% for crest vertical curves, nor 12% for sag vertical curves.
2. The limits for X are based on a 6" curb height. For other curb heights, the limits for X shall be adjusted.
3. See Standard Drawing E 610–DRIV–16 for ~~keyway~~ longitudinal construction joint details.
4. Ear construction type B ~~Standard~~ as shown on Standard Drawing E 605-ERCN-02

LEGEND

W = Width of sidewalk

X = Distance between back face of curb and sidewalk

Y = Distance from front face of curb to ℄ or R/W

Curb ramp

Curb ramp view.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS I DRIVE
SIDEWALK NOT ADJACENT TO CURB
JANUARY 2000

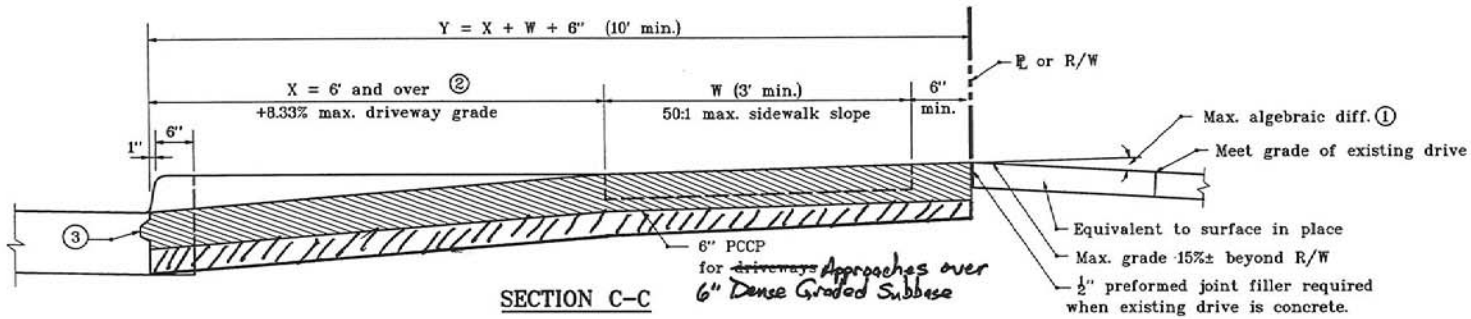
STANDARD DRAWING NO. E 610–DRIV–02

ANTHONY L. URBANOVICH REGISTERED No. 18035 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

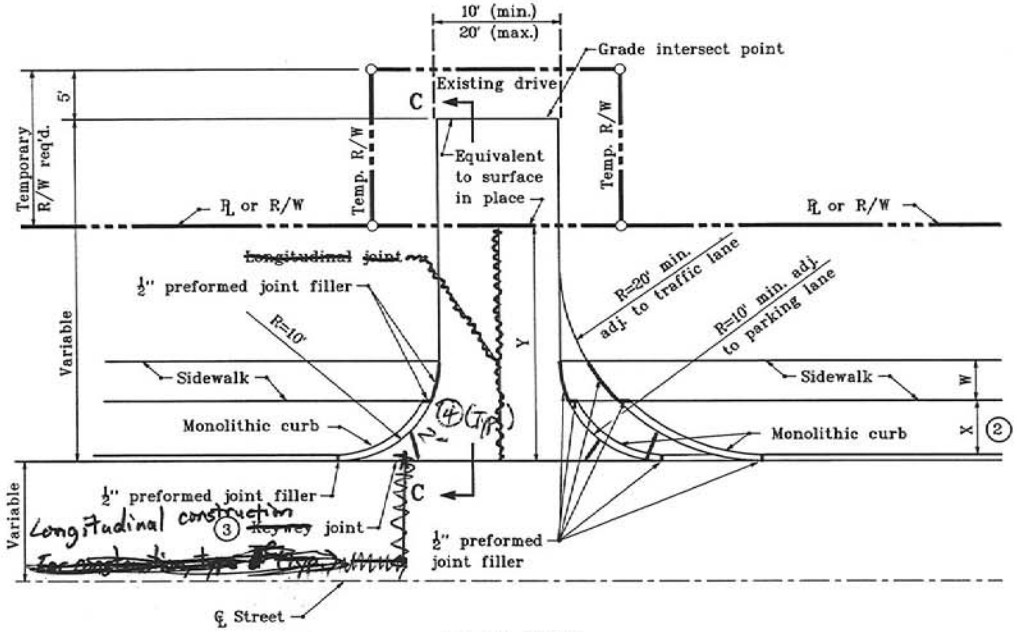
/s/ Anthony Urbanovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

DRAFT

/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



SECTION C-C



PLAN VIEW

X = 6' AND OVER FROM FACE OF CURB

NOTES :

① The maximum algebraic difference in grades shall not exceed 8% for crest vertical curves, nor 12% for sag vertical curves.

② The limits for X are based on a 6" curb height. For other curb heights, the limits for X shall be adjusted.

③ See Standard Drawing E 610-DRIV-16 for ~~keyway~~ construction joint details.

④ longitudinal
Ear construction type B ~~joint~~ as shown
LEGEND on Standard Drawing E 605-ERCN-02

W = Width of sidewalk

X = Distance between back face of curb and sidewalk

Y = Distance from front face of curb to ℄ or R/W

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS I DRIVE
SIDEWALK NOT ADJACENT TO CURB
JANUARY 2000

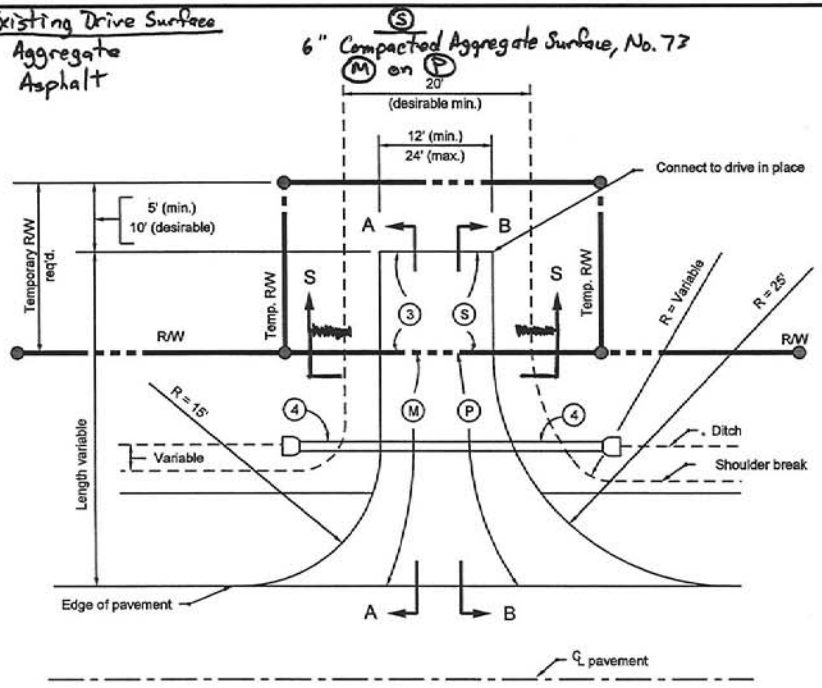
STANDARD DRAWING NO. **E 610-DRIV-03**

ANTHONY L. URGOVICH REGISTERED No. 18935 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Urgovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

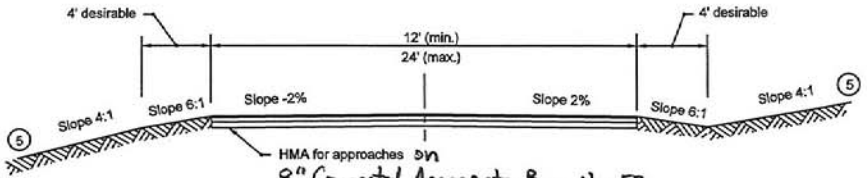
/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE

Existing Drive Surface
Aggregate
Asphalt



PLAN VIEW

USED FOR RESIDENCES, BARNS, PRIVATE GARAGES, ETC.



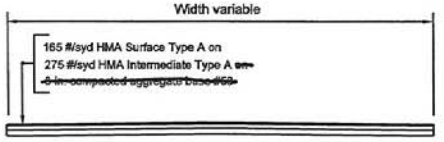
SECTION S-S

NOTES :

1. The driveway detailed on this sheet shall be used under the following conditions:
   - the mainline shoulder is paved and is less than 8 ft in width
   - the mainline shoulder is not paved
   - the existing drive surface is asphalt or aggregate
2. If the driveway surface is unimproved cross section as for driveway Class V can be used in place of Section S-S, see Drawing E 610-DRIV-11 for details.
3. See Standard Drawing E 610-DRIV-07 for General Notes.
4. See Standard Drawing E 610-DRIV-06 for Sections A-A and B-B.
5. [redacted]

LEGEND

- (M) Limits of HMA for approaches
- (P) Limits of compacted aggregate base
- (S) Equivalent to surface in place – see above



HMA FOR APPROACHES

TYPICAL SECTION

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II DRIVE

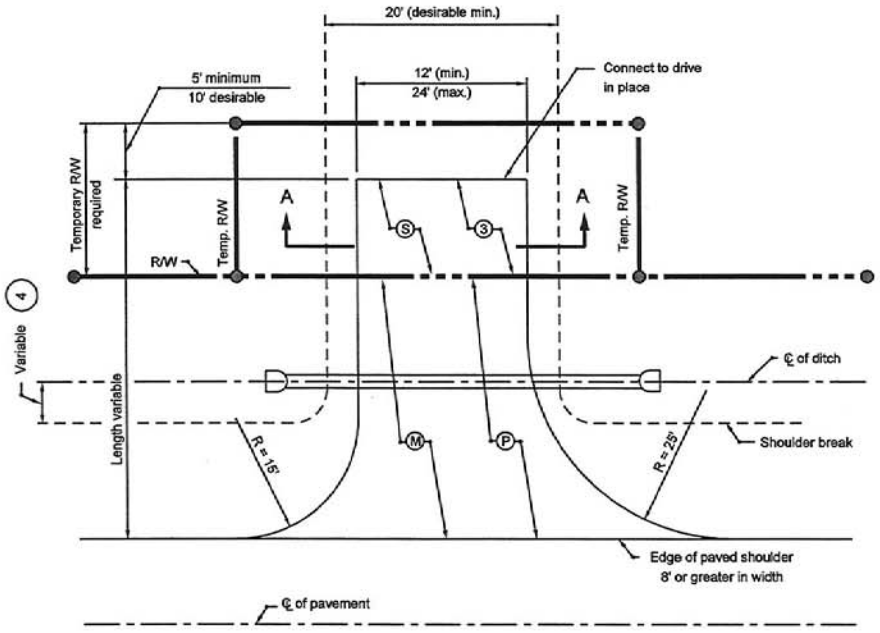
MARCH 2003

STANDARD DRAWING NO. E 610-DRIV-04

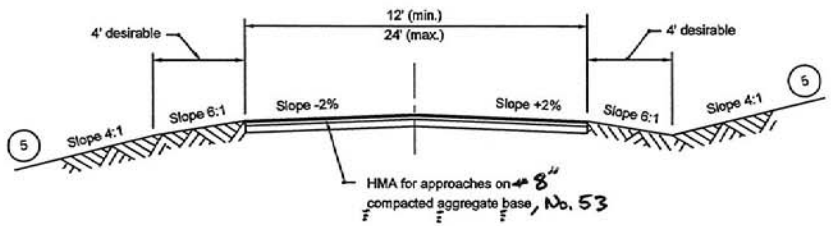
RICHARD L. VOGLEWEDE REGISTERED NO. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Richard L. Voglewede 3-03-03
DESIGN STANDARDS ENGINEER DATE

/s/ Richard K. Smutzer 3-03-03
CHIEF HIGHWAY ENGINEER DATE



PLAN VIEW



~~CROSS~~ SECTION A-A

NOTES :

1. The driveway detailed on this sheet shall be used when the mainline shoulder is paved and 8' or greater in width.
2. See Standard Drawing E 610-DRIV-07 for General Notes.
3. See Standard Drawing E 610-DRIV-07 for approach grades with paved shoulder.

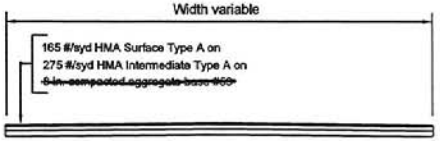
existing driveway surface is asphalt or aggregate and

Existing Drive Surface
Aggregate
Asphalt

(S)
6" Compacted Agg. Surface, No. 73
(M) on (P)

LEGEND

(M) Limits of HMA for approaches
(P) Limits of compacted aggregate base
(S) Equivalent to surface in place - see above



HMA FOR APPROACHES

TYPICAL SECTION

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II DRIVE

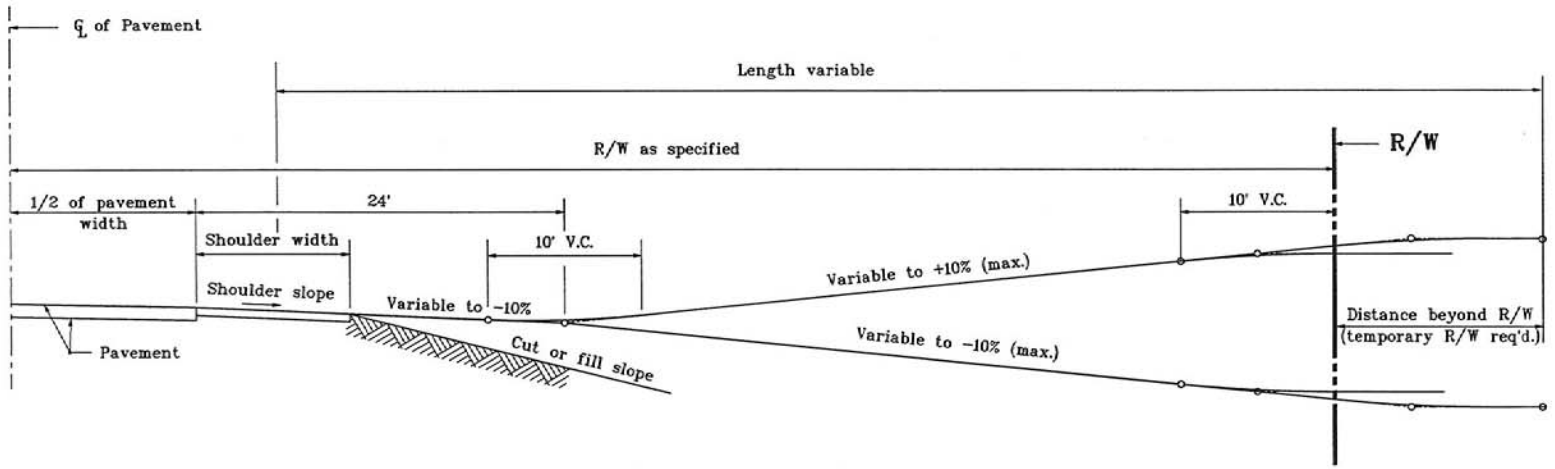
MARCH 2003

STANDARD DRAWING NO. E 610-DRIV-05

RICHARD L. VAN CLEAVE REGISTERED No. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Richard L. VanCleave — DESIGN STANDARDS ENGINEER — 3-03-03 DATE

/s/ Richard K. Sauzer — CHIEF HIGHWAY ENGINEER — 3-03-03 DATE



APPROACH GRADE FOR CUT OR FILL TO BE USED WITH PAVED SHOULDER

GENERAL NOTES :

1. These notes are for the drawings E 610-DRIV-04, -05, -06, -09, -10 and -11.
2. If a concrete approach is ~~designed~~ required for a class II or class IV drive, the radii shall be constructed using ear construction type C as detailed on Standard Drawing E 605-ERCN-01.

(3) When the maximum approach grade of ±10% does not meet the grade of the existing drive before the R/W line, the approach grade of ±10% shall extend beyond the R/W to the point of intersection with the existing driveway grade. Construction beyond the R/W line shall be done in temporary R/W.

(4) Driveway culverts which cannot be located outside the clear zone shall have appropriate end sections at both ends of the culvert.

(5) Driveway embankment slope within the clear zone for a road functionally classified as follows shall be:
   a.) 6:1 for an arterial or a high speed (over 40 mph design speed) collector.
   b.) 4:1 for a local road or a low speed (40 mph or lower design speed) collector.

the driveway section shall be 6" PCCP for Approaches on 6" Dense Graded Subbase, and

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II, IV, & V DRIVES APPROACH GRADES

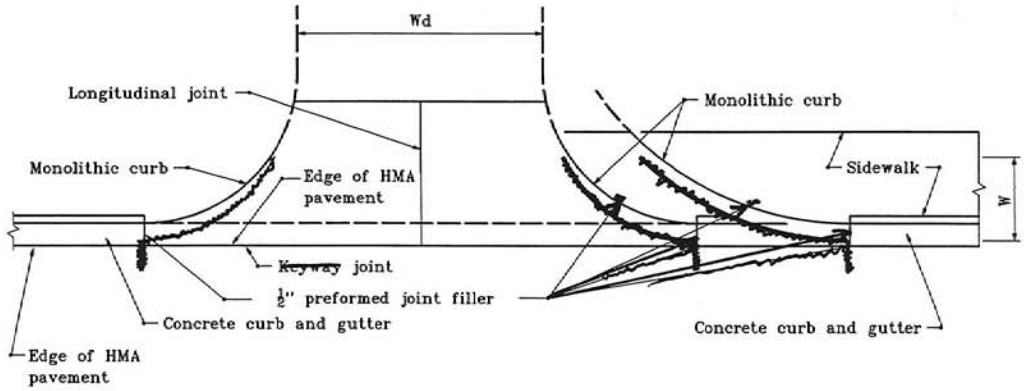
MARCH 20-02

STANDARD DRAWING NO. E 610-DRIV-07

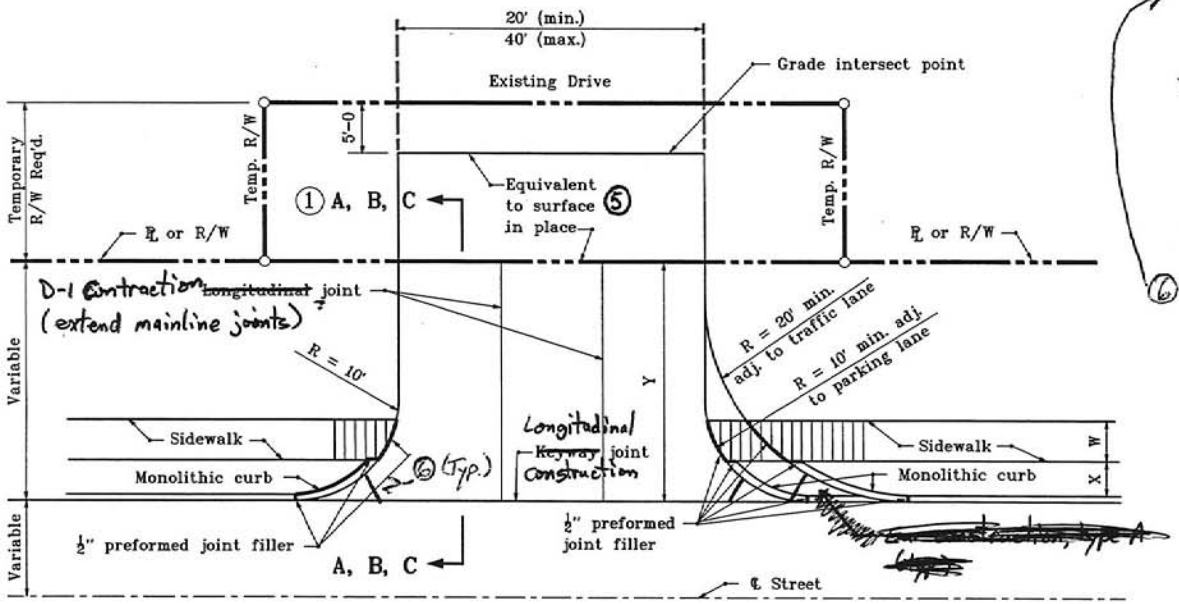
RICHARD L. VANCLEAVE REGISTERED No. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Richard L. VanCleave 3-01-02
DESIGN STANDARDS ENGINEER DATE

/s/ Richard K. Smutzer 3-01-02
CHIEF HIGHWAY ENGINEER DATE



CONCRETE CURB & GUTTER CONNECTION FOR CLASS I & III DRIVES



PLAN VIEW – CLASS III DRIVE

NOTES :

① See Standard Drawing E 610-DRIV-01 for Section A-A. See Standard Drawing E 610-DRIV-02 for Section B-B. See Standard Drawing E 610-DRIV-03 for Section C-C.

2. For Class III drive, PCCP ~~for driveways~~ for Approaches shall be placed over 6 in. of compacted aggregate ~~for~~ base, ~~type B~~ No. 53.

3. See Standard Drawing E 610-DRIV-16 for ~~keyway~~ joint detail. longitudinal construction joint

4. See Standard Drawing E 610-DRIV-07 for General Notes.

⑤ See Standard Drawing E 610-DRIV-09 for appropriate aggregate and asphalt driveway sections

LEGEND

W = Width of sidewalk

Wd = Driveway width

X = Distance between back face of curb and sidewalk

Y = Distance from front face of curb to ℄ or R/W

Curb ramp

⑥ For construction type B ~~[illegible]~~ as shown on Standard Drawing E605-ERCN-02

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS III DRIVE

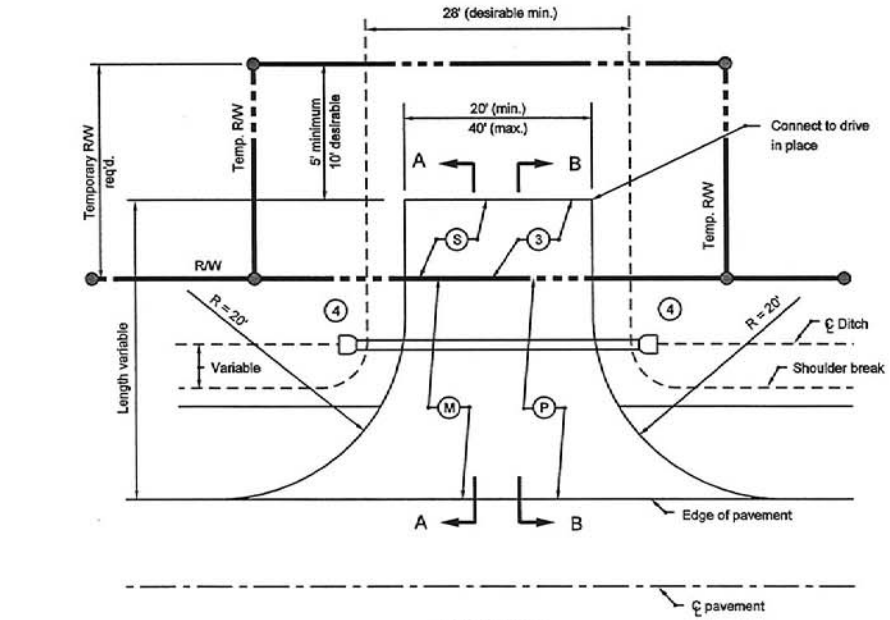
JANUARY 2000

STANDARD DRAWING NO. E 610-DRIV-08

ANTHONY L. URICHOVICH REGISTERED No. 18995 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

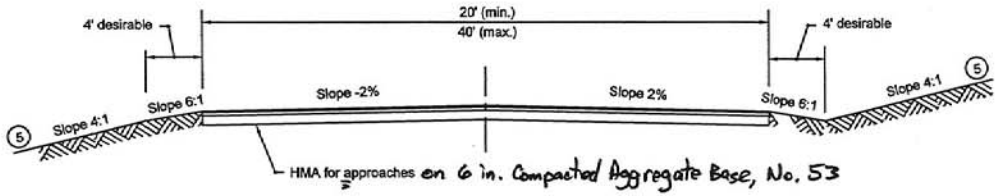
/s/ Anthony L. Urichovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



PLAN VIEW

COMMERCIAL



CROSS SECTION

NOTES :

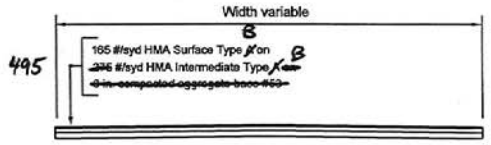
1. The driveway detailed on this sheet shall be used under the following conditions:
   - the mainline shoulder is paved and is less than 8 ft in with
   - the mainline shoulder is not paved
   - the existing drive surface is asphalt or aggregate
2. See Standard Drawing E 610-DRIV-07 for General Notes.
3. See Standard Drawing E 610-DRIV-06 for Sections A-A and B-B.

Existing Drive Surface
Aggregate
Asphalt

(S)
6" Compacted Agg. Surface, No. 73
(M) on (P)

LEGEND

(M) Limits of HMA for approaches
(P) Limits of compacted aggregate base
(S) Equivalent to surface in place - see above



HMA FOR APPROACHES

TYPICAL SECTION

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS IV DRIVE

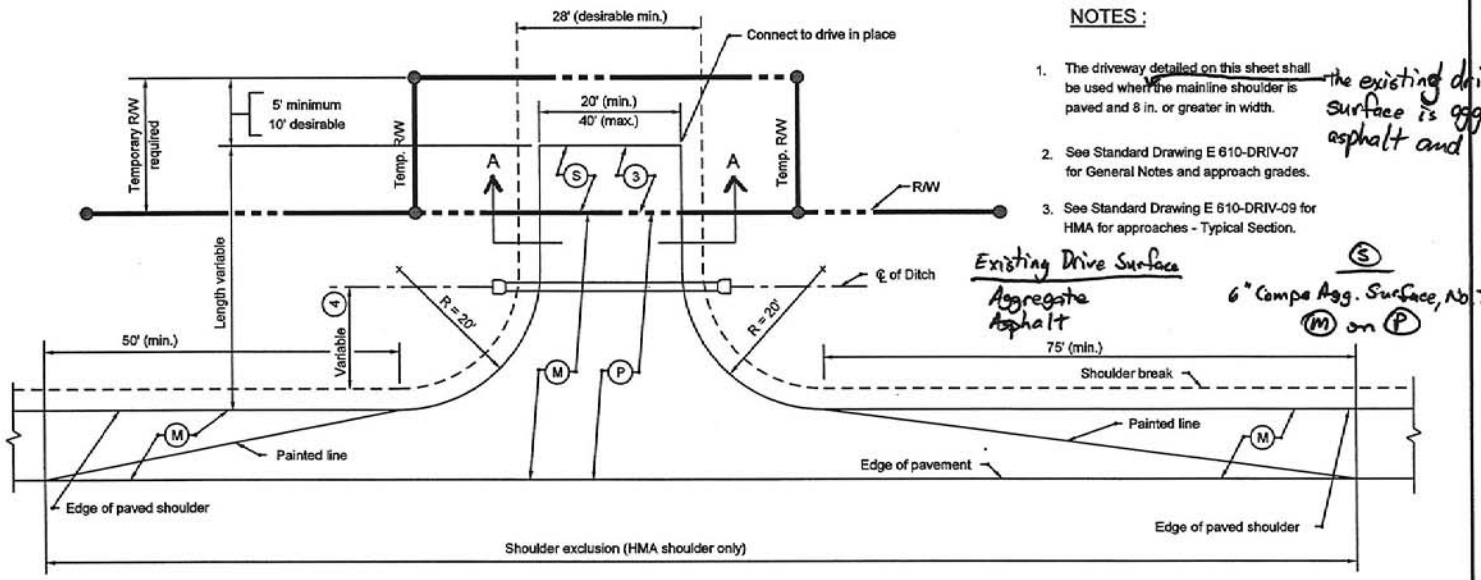
MARCH 2003

STANDARD DRAWING NO. E 610-DRIV-09

RICHARD L. VANCLEAVE REGISTERED No. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER DESIGN STANDARDS ENGINEER

/s/ Richard L VanCleave 3-03-03
DESIGN STANDARDS ENGINEER DATE

/s/ Richard A Smutzer 3-03-03
CHIEF HIGHWAY ENGINEER DATE



PLAN VIEW

NOTES :

1. The driveway detailed on this sheet shall be used when the mainline shoulder is paved and 8 in. or greater in width.
2. See Standard Drawing E 610-DRIV-07 for General Notes and approach grades.
3. See Standard Drawing E 610-DRIV-09 for HMA for approaches - Typical Section.

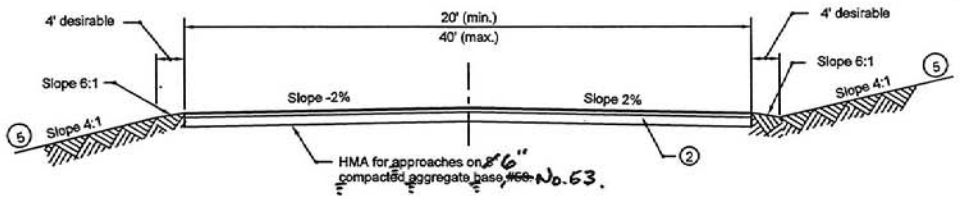
the existing driveway surface is aggregate or asphalt and

Existing Drive Surface
Aggregate
Asphalt

(S)
6" Compa Agg. Surface, No. 73
(M) on (P)

LEGEND

- (M) Limits of HMA for approaches
- (P) Limits of compacted aggregate base
- (S) Equivalent to surface in place



SECTION A-A

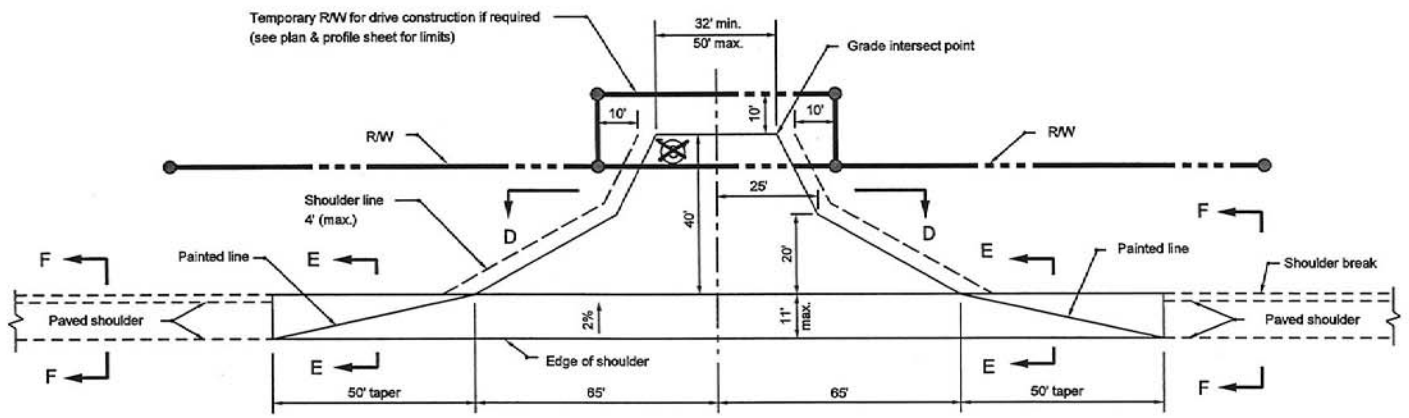
INDIANA DEPARTMENT OF TRANSPORTATION
CLASS IV DRIVE
MARCH 2003
STANDARD DRAWING NO. E 610-DRIV-10

RICHARD L. VANCE ENGINEER REGISTERED NO. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Richard L. VanCleave 3-03-03
DESIGN STANDARDS ENGINEER DATE

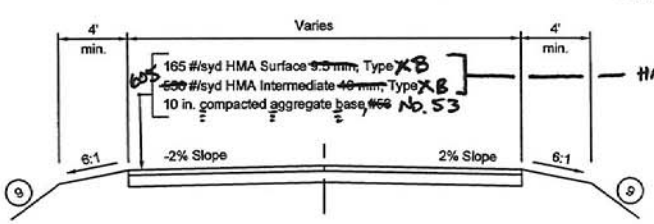
/s/ Richard K. Smutzer 3-03-03
CHIEF HIGHWAY ENGINEER DATE

DRAFT

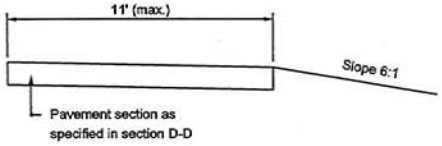


CLASS VI DRIVE - PLAN

COMMERCIAL



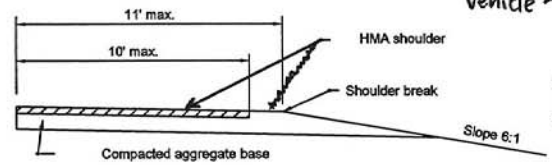
SECTION D-D



SECTION E-E

NOTES :

1. The Class VI Drive is designed to accomodate a WB-20 (IDV) design vehicle with a 45 ft turning radius. This drive shall be specified at truck stops and entrances to heavy industrial property.
2. See Standard Drawing E 610-DRIV-13 for profile grades.
3. See Standard Drawing E 610-DRIV-14 for General Notes and Legend.



SECTION F-F

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VI DRIVE
PLAN AND SECTIONS

MARCH 2003

STANDARD DRAWING NO. E 610-DRIV-12

RICHARD L. VANCLEAVE REGISTERED No. 9990 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Richard L. VanCleave — 3-03-03
DESIGN STANDARDS ENGINEER — DATE

/s/ Richard K. Smelzer — 3-03-03
CHIEF HIGHWAY ENGINEER — DATE

GENERAL NOTES :

1. These notes are for Standard ~~Drawing~~ Drawings E 610-DRIV-12, -13, -15, -16.
2. The class VI and VII drives are designed to accomodate a WB-65 (IDV) design vehicle with a 45 ft turning radius.

(7) The maximum algebraic difference in grades shall not exceed 8% for ~~crested~~ crested grade nor 12% for ~~sagged~~ sagged grades.

(8) The minimum driveway pavement section has been designed for 200 trucks per day. If the truck traffic count is greater than 200 per day, the required pavement section shall be as shown elsewhere on the plans.

(9) Driveway embankment slopes within the clear zone for a road functionally classified as follows shall be :
6 : 1 for an arterial or a high speed (over 40 mph design speed) collector.
4 : 1 for a local road or a low speed (40 mph or lower design speed) collector.

(10) Driveway culverts which cannot be located outside the clear zone shall have appropriate end sections at both ends.

(11) Hc - earth cover over culvert or pipe shall be 1 ft or greater.

(12) Curb ramp type G, as shown on Standard Drawing E 604-SWCR-09, shall be used when sidewalk is adjacent to curb.

(13) When X is equal to or greater than 2 ft but less than 5 ft, curb ramp type H as shown on Standard Drawing E 604-SWCR-09 shall be used.

(14) When X is equal to or greater than 5 ft, no curb ramp is required.

LEGEND

(3) ~~Longitudinal~~ D-1 Contraction joint
(4) ~~Keyway~~ Longitudinal Construction joint
(5) ½ in. preformed joint filler
(6) Monolithic curb
(F) Concrete sidewalk
~~(S) For type and thickness equivalent to surface in place, see plans.~~
(U) Concrete curb ramp

X = Distance between face of curb and sidewalk
W = Width of sidewalk
~~Cement Concrete Pavement~~ PCCP for ~~Driveways~~ Approaches
Curb ramp
Curb ramp view

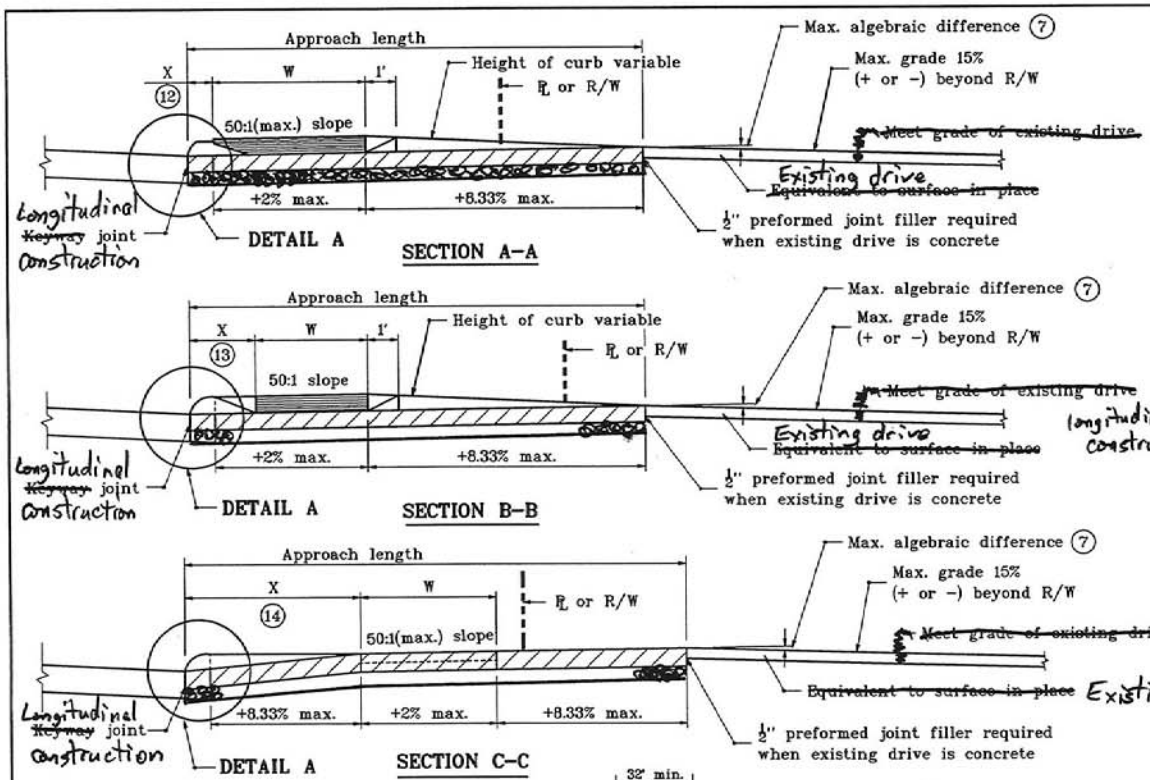
INDIANA DEPARTMENT OF TRANSPORTATION
CLASS VI AND VII DRIVES
GENERAL NOTES AND LEGEND
MARCH 2002
STANDARD DRAWING NO. **E 610-DRIV-14**

RICHARD L. VANDEVEER REGISTERED No. 9780 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Richard L. Vandeveer 3-01-02
DESIGN STANDARDS ENGINEER DATE

/s/ Richard K. Smutzer 3-01-02
CHIEF HIGHWAY ENGINEER DATE

DRAFT



NOTES :

1. The Class VII drive shall be specified at truck stops and entrances to heavy industrial property.
2. All Class VII drives shall be concrete to at least the Right-of-Way line with minimum length 20'.
3. See Standard Drawing E 610-DRIV-16 for ~~keyway~~ joint shown in Detail A and for joint placement and corner reinforcement.
4. See Standard Drawing E 610-DRIV-14 for General Notes and Legend.

INDIANA DEPARTMENT OF TRANSPORTATION

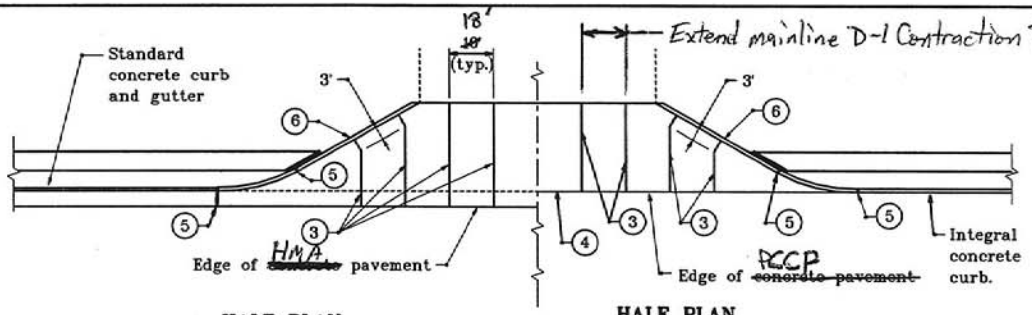
CLASS VII DRIVE
PLAN AND PROFILE GRADE
JANUARY 2000

STANDARD DRAWING NO. **E 610-DRIV-15**

ANTHONY L. URENOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

/s/ Anthony L. Urenovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



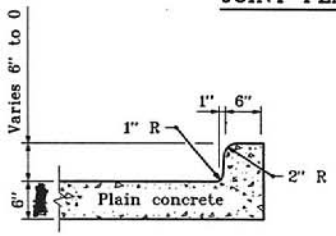
HALF PLAN
STANDARD COMBINED CURB & GUTTER

HALF PLAN
INTEGRAL CONCRETE CURB

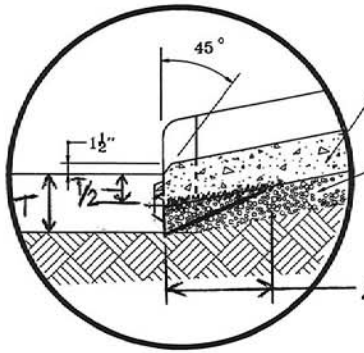
NOTES :

1. See Standard Drawing E 610-DRIV-15 for plan and profiles of Class VII drive.
2. See Standard Drawing E 610-DRIV-14 for General Notes and Legend.
3. DETAIL A – shows ~~keyway~~ longitudinal construction joint in detail. For location see Drawing E 610-DRIV-15.

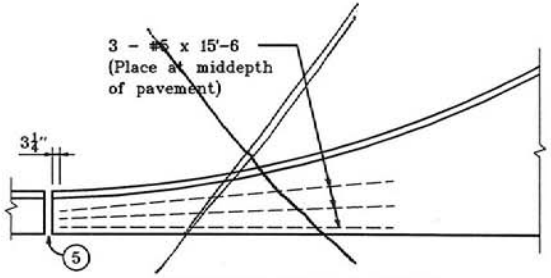
JOINT PLACEMENT DETAIL



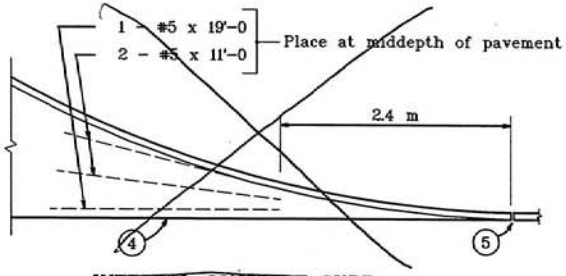
MONOLITHIC CURB (6)



DETAIL A



~~COMBINED CURB & GUTTER~~



~~INTEGRAL CONCRETE CURB~~

~~TYPICAL CORNER REINFORCING~~

INDIANA DEPARTMENT OF TRANSPORTATION

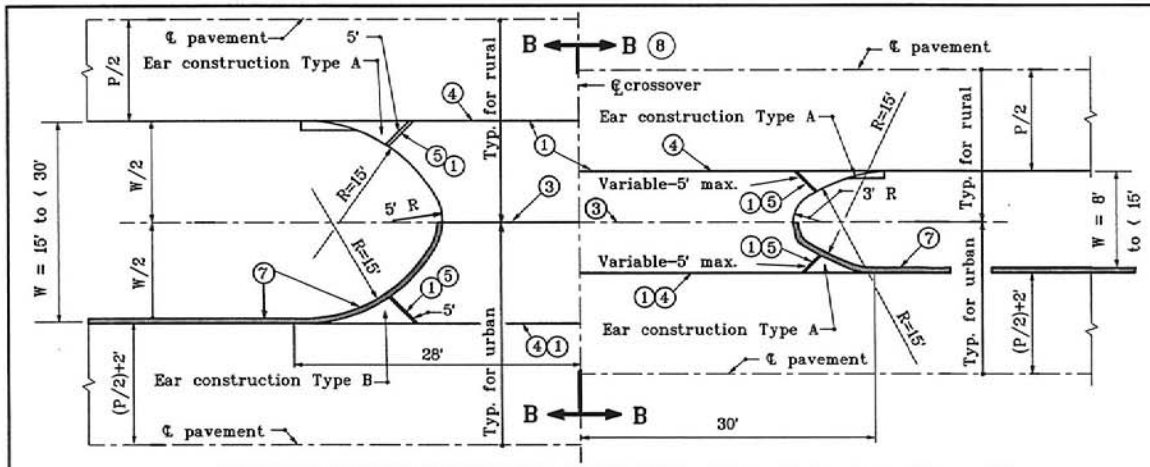
CLASS VII DRIVE
JOINT PLACEMENT AND CORNERS
JANUARY 2000

STANDARD DRAWING NO. **E 610-DRIV-16**

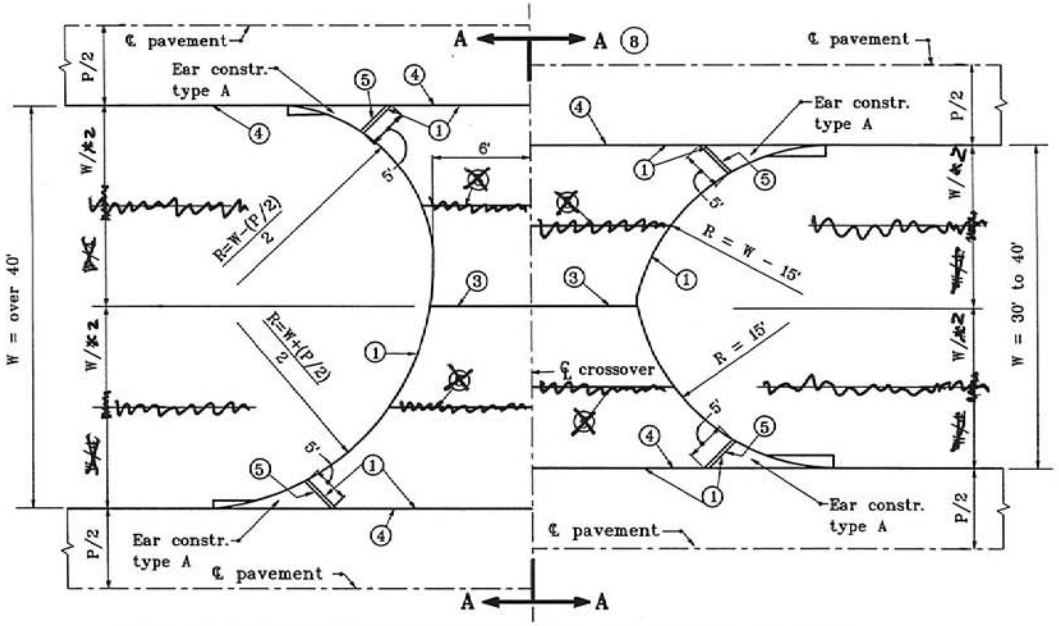
ANTHONY L. UREMOVICH REGISTERED No. 18955 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



PRIVATE DRIVE CROSSOVER PLAN FOR W = 8' to less than 30'



PRIVATE DRIVE CROSSOVER PLAN FOR W = 30' to over 40'

NOTES :

1. Thickened edge
2. See Standard Drawings:
   E 605-ERCN-01 for TYPE "A" ear construction
   E 605-ERCN-02 for TYPE "B" ear construction
   E 610-DRIV-17 for sections A-A and B-B
3. CD-1 Contraction joint ~~type B-1~~, see Standard Drawing E 603-CCPJ-01 for details.
4. Longitudinal ~~Keyway~~ construction joint, see Standard Drawing E 610-DRIV-16 for details.
5. 1" preformed joint filler
6. Private drive crossover shall be constructed of Hma ~~a flexible section~~ unless otherwise directed by the engineer.
7. Intergral concrete curb, see Standard Drawing E 605-CCIN-01 for details.
8. For cross sections A-A and B-B see Standard Drawing E 610-DRIV-18.

INDIANA DEPARTMENT OF TRANSPORTATION

PRIVATE DRIVE CROSSOVERS PLANS

JANUARY 2000

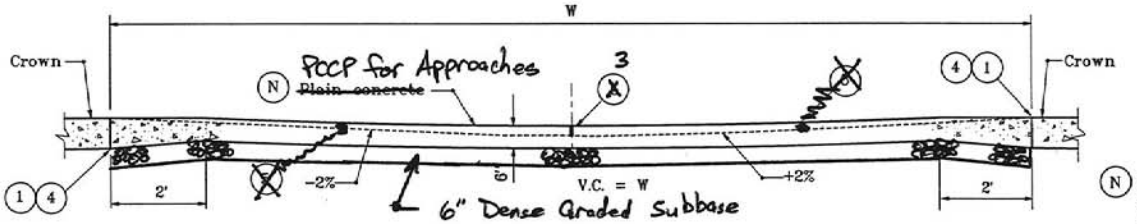
STANDARD DRAWING NO. **E 610-DRIV-17**

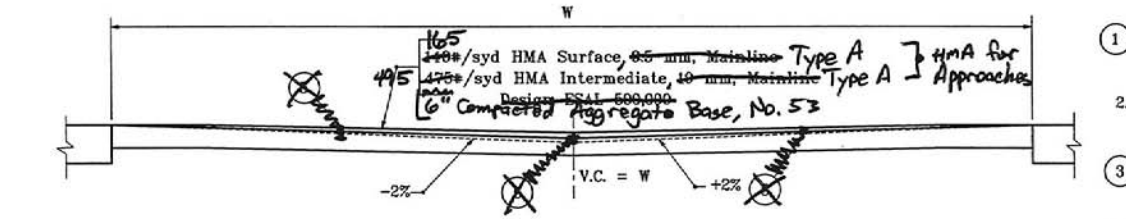
ANTHONY L. UHRENOVICH REGISTERED No. 18035 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uhrenovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

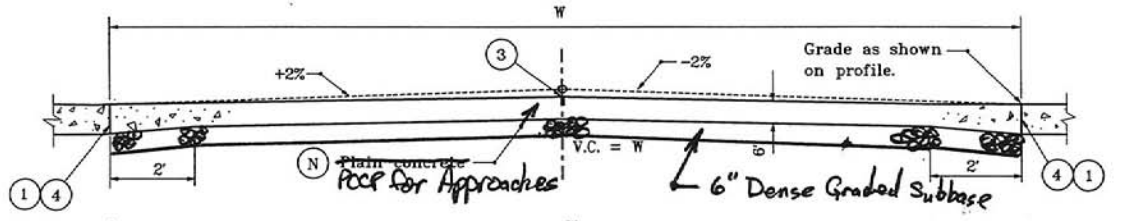
DRAFT

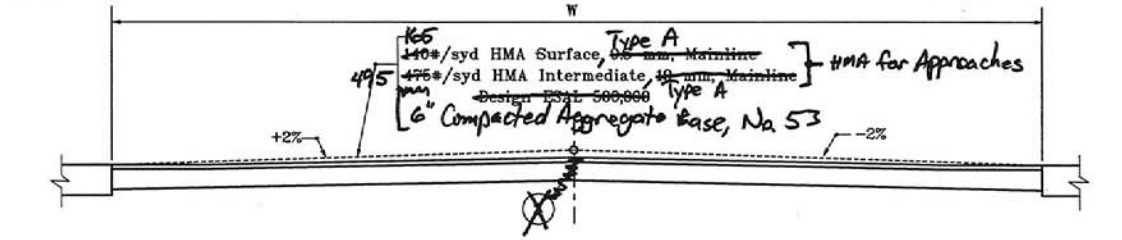
/s/ Firoz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE





SECTION A–A
TO BE USED WITH CROWN PAVEMENTS.





SECTION B–B
TO BE USED WITH 3 in. TILTED PAVEMENTS

NOTES :

(N) Private drive crossover shall be constructed of a flexible pavement unless otherwise directed by the Engineer.

(1) Thickened edge ~~to~~ varies from the mainline thickness ~~or 8" min.~~ for ~~plain concrete crossovers.~~ to 6" PCCP for Approaches

2. For location of cross sections see Standard Drawing E 610-DRIV-17.

(3) Contraction joint type D-1, see Standard Drawing E 501-CCPJ-06 for details.

(4) ~~Keyway~~ Longitudinal construction joint, see Standard Drawing E 610-DRIV-16 for details.

(5) 1" preformed joint filler

INDIANA DEPARTMENT OF TRANSPORTATION

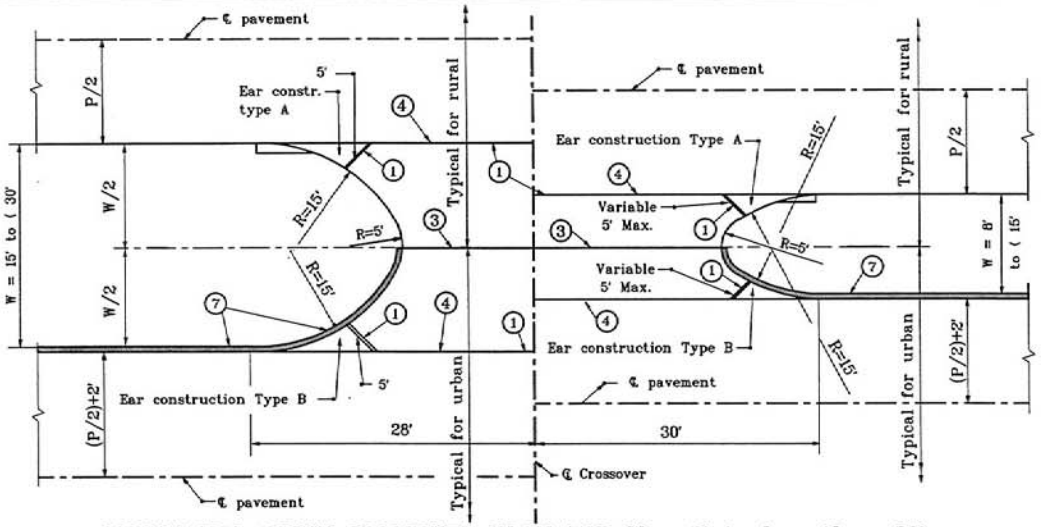
PRIVATE DRIVE CROSSOVERS
CROSS SECTIONS
JANUARY 2000

STANDARD DRAWING NO. **E 610-DRIV-18**

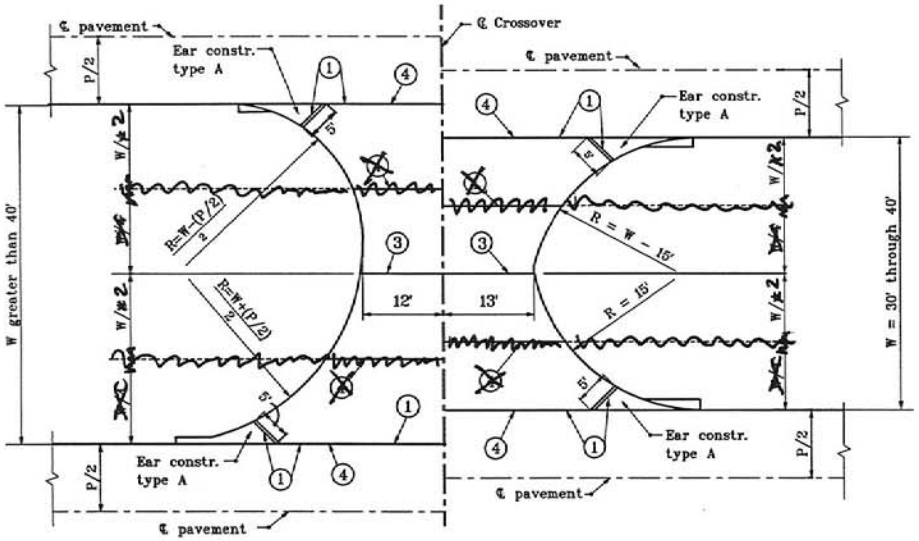
ANTHONY L. UHRENCHUCH REGISTERED No. 18805 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uhrenchuch 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Krooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



COMMERCIAL DRIVE CROSSOVER PLAN FOR W = 8' to less than 30'



COMMERCIAL DRIVE CROSSOVER PLAN FOR W = 30' to over 40'

NOTES :

(1) Thickened edge

2. See Standard Drawings :
   E 605-ERCN-01 for TYPE "A" ear construction
   E 605-ERCN-02 for TYPE "B" ear construction

(3) Contraction joint ~~type D-1,~~ see Standard Drawing E 503-CCPJ-01 for details.

(4) ~~Keyway~~ construction joint – see Drawing E 610-DRIV-16 for details.

6. Grade and cross section for commercial drive crossover shall be the same as for private drive crossover, except that the HMA ~~Intermediate 19 mm, Mainline Type~~ shall be ~~660#~~/syd. For cross sections see Standard Drawing E 610-DRIV-18.

(7) Integral concrete curb, see Standard Drawing E 605-CCIN-01 for details.

8. Commercial drive crossover shall be consrtucted of ~~a flexible section~~ unless otherwise directed by the Engineer.

INDIANA DEPARTMENT OF TRANSPORTATION

COMMERCIAL DRIVE CROSSOVERS PLANS

JANUARY 2000

STANDARD DRAWING NO. **E 610-DRIV-19**

ANTHONY L. UREMOVICH REGISTERED No. 18935 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

DRAFT

/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE

Item No. 45-16
Mr. Miller
Date: 2/19/04

REVISION TO STANDARD DRAWINGS

610-PRAP-02, Public Road Approach Type A
610-PRAP-03, Public Road Approach Type B
610-PRAP-06, Public Road Approach Type C
610-PRAP-10, Public Road Approach Type D
610-PRAP-13, Public Road Approach, HMA Mainline Pavement
610-PRAP-14, Public Road Approach, PCCP or HMA Mainline Pavement

Other sections containing specific cross references: None	General Instructions to Field Employees Update Required? Y___ N___ By - Addition or Revision Frequency Manual Update Required? Y____ N____ By – Addition or Revision
Recurring Special Provisions potentially affected: None	Standard Sheets potentially affected: See Above
Motion: Mr. Second: Mr. Ayes: Nays:	Action: Passed as submitted; revised Effective - _____ Letting _____ Supplementals Withdrawn. Resubmit? _____ Received FHWA Approval? ____